

TMP Bleaching Project

Application Addendum

The TMP bleaching project involves increasing the brightness of the TMP pulp used in the manufacturing of coated paper. The additional brightness will improve coated paper quality, and also require slightly less kraft pulp in the coated sheet. The reduced kraft pulp content in the coated sheet will allow coated paper production to be increased by approximately 16,250 tons per year. The increased coated paper production is expected to be produced on the No. 3 paper machine.

TMP Production

The reduced kraft content in the coated sheet will be replaced with TMP, resulting in an increase in TMP pulp production. Although some percentage of the weight is coatings, actual TMP production will also be assumed to increase 16,250 tons per year. It should also be noted the additional tons will not exceed the permitted capacity of TMP. The VOC emissions from the increased 16,250 tons of TMP production are presented below.

TMP Pulping Equipment

Increased Production = 16,250 ADSTP/year (air dried short tons pulp/year)
= 44.5 ADSTP/day

Volatile Organic Compound (VOC) Emissions

VOC Emission factor = 1.5 lb/ADSTP

$44.5 \text{ ADSTP/day} \times 1.5 \text{ lb/ADSTP} \times 1 \text{ day/24 hr} = 2.78 \text{ lbs/hr}$

$2.78 \text{ lb/hr} \times 8,760 \text{ hr/yr} \times 1 \text{ ton/2,000 lb} = 12.2 \text{ tons/yr}$

No. 3 Coated Paper Machine

The emissions from the coating section of the No. 3 paper machine are not expected to change as a result of this project. The increased TMP brightness will allow increasing the TMP content of the sheet, which requires less energy than kraft pulp to achieve the same level of dryness. The improved sheet brightness from the bleached TMP pulp will reduce the amount of optical

brighteners required to achieve desired product specifications. Since optical brighteners are applied using an emulsion, reduced usage will require less energy to dry the coatings.

The No. 3 coater uses air flotation and infrared drying to remove water from the coatings. The air flotation dryer has one natural gas fired low-NO_x burner (BACT for NO_x) with an approximate heat input of sixteen million British Thermal Units (BTU) per hour. The infrared drying section uses 960 natural gas fired emitters with a total heat input of 22.6 million BTU per hour. The No. 3 paper machine also includes a hot oil heating system having a heat input of approximately 9.1 million BTU per hour.

The increase in coated paper production will not increase the maximum permitted heat input of the fuel burning equipment, because less optical brighteners will be required, reducing the amount of energy needed to dry the coatings. Therefore, increased coated paper production can be accommodated using the existing air flotation dryer, infrared dryer, and hot oil heating system without any modifications or increase in maximum permitted capacity.

The No. 3 coated paper machine, including the associated fuel burning equipment, began operating at current permitted capacity in August 2004. Since the No. 3 coated paper machine has been manufacturing coated paper less than two-years, and began operating at current permitted capacity in August 2004, the past actual emissions are assumed to equal the potential emissions, consistent with the 1990 draft New Source Review Manual (page A.41). Therefore, there will be no increase in emissions from the fuel burning equipment that is part of the coating section of the No. 3 paper machine.

A revised summary of the emissions (tpy) resulting from the project is presented below (revised emissions in italics):

	PM/PM₁₀	SO₂	NO_x	CO	VOC
TMP Bleaching	0	0	0	0	8.2
<i>TMP Pulping</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>12.2</i>
No. 3 Paper Machine	0	0	0	0	1.4
Steam Increase	5.7	38.2	15.1	32.5	1.9
<i>Total Project</i>	<i>5.7</i>	<i>38.2</i>	<i>15.1</i>	<i>32.5</i>	<i>23.7</i>
NSR Threshold	25/15	40	40	100	40
NSR Required?	No	No	No	No	No